

DEPARTMENT OF TRANSPORTATION

DES-OE MS #43
1727 30TH Street, 2ND Floor
Sacramento, CA 95816



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April 23, 2004

04-SF-80-13.2/13.9
04-0120F4
ACBRIM-080-1(095)N

Addendum No. 22

Dear Contractor:

This addendum is being issued to the contract for construction on State highway in SAN FRANCISCO COUNTY IN SAN FRANCISCO FROM 0.6 KM TO 1.3 KM EAST OF THE YERBA BUENA TUNNEL EAST PORTAL.

Submit bids for this work with the understanding and full consideration of this addendum. The revisions declared in this addendum are an essential part of the contract.

Bids for this work will be opened on May 26, 2004.

This addendum is being issued to revise the Notice to Contractors and Special Provisions and the Proposal and Contract.

In the Special Provisions, Section 2-1.05, "ALTERNATIVE BIDS," the third paragraph is revised as follows:

"The proposal shall set forth, for each Alternative schedule submitted, the unit prices, item totals, and TOTAL BID, all in clearly legible figures, in the respective spaces provided, and shall be signed by the bidder, who shall fill out all blanks in the proposal form as therein required."

In the Special Provisions, Section 2-1.05, "ALTERNATIVE BIDS," the last paragraph is revised as follows:

"The bidder's security required in Section 2-1.07, "Proposal Guaranty," of the Standard Specifications, shall be in an amount equal to at least 10 percent of the amount bid for the greater of the 2 Alternatives. The Bidder's Bond form mentioned in the last paragraph in Section 2-1.07, "Proposal Guaranty," of the Standard Specifications will be found following the signature page of the Proposal."

In the Special Provisions, Section 3-1.01B, "AWARD AND EXECUTION OF CONTRACT," is revised as attached.

In the Special Provisions, Section 4, "BEGINNING OF WORK, TIME OF COMPLETION AND LIQUIDATED DAMAGES," is revised as attached.

In the Special Provisions, Section 5-1.12, "PROJECT INFORMATION," subsection "INFORMATION HANDOUT," subsection "District Materials Information," under Items available for inspection, the following item is added:

"R. Preliminary Pipe Beam Temporary Support Working Drawings from Contract 04-012024 (Skyway)."

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In the Special Provisions, Section 5-1.27, "PAYMENTS," in the fifth paragraph, Item F is added as follows:

"F. Document Management System \$1,250,000"

In the Special Provisions, Section 10-1.01, "ORDER OF WORK," the sixth paragraph is revised as follows:

"The State will furnish to the Contractor working drawings and a steel template for the as-fabricated tower footing for locating the holes in the tower base plate for the tower anchorage anchor bolt pipe sleeves and the dowels no later than June 15, 2006, in accordance with the requirements in "STEEL STRUCTURES," subsection "TEMPLATE," of these special provisions."

In the Special Provisions, Section 10-1.12, "TIME-RELATED OVERHEAD," is revised as attached.

In the Special Provisions, Section 10-1.175, "DOCUMENT MANAGEMENT SYSTEM," is added as attached.

In the Special Provisions, Section 10-1.41, "SPHERICAL BUSHING BEARING (PIER E2)," subsection "WORKING DRAWINGS," the fifth paragraph is revised as follows:

"Each working drawing and calculation sheet shall be signed by an engineer who is registered as a Civil Engineer or Mechanical Engineer in the State of California."

In the Special Provisions, Section 10-1.42, "FURNISH SPHERICAL BUSHING RING BEARING (HINGE K)," subsection "WORKING DRAWINGS," the fifth paragraph is revised as follows:

"Each working drawing and calculation sheet shall be signed by an engineer who is registered as a Civil Engineer or Mechanical Engineer in the State of California."

In the Special Provisions, Section 10-1.44, "SHEAR KEY (PIER E2)," is revised as attached..

In the Special Provisions, Section 10-1.441, "LUBRICANT AND TEST," subsection "MATERIALS," the first and second paragraphs are revised as follows:

"The lubricant shall consist of a combination of solids having non-deteriorating characteristics as well as inherent lubricating qualities. The lubricant shall be capable of withstanding the effects of long-term atmospheric exposure and submersion in seawater, fresh water, and most solvents. Graphite, molybdenum disulfide or other ingredients that tend to promote electrolytic or chemical action shall not be used in the lubricant. The use of shellac, tars, solvents or other non-lubricating binder materials shall not be permitted. The lubricant shall have a minimum durometer hardness of 90 on the Shore 'A' scale when tested in accordance with ASTM Designation: D2240.

The lubricant shall be integrally molded and compressed into recesses provided for containment of the lubricant. The recesses shall be of sufficient depth to properly contain the lubricant and shall comprise not less than 30 percent of the total bearing area. The recesses shall be arranged in an overlapping geometric pattern with successive rows overlapping in the direction of motion. Trepan recesses or drilled holes shall be used for diameters 250 mm and larger."

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In the Special Provisions, Section 10-1.51, "STEEL STRUCTURES," subsection "MATERIALS," the third paragraph is revised as follows:

"The following structural elements shall include Supplementary Requirements S28 "Fine Grain Practice" and S29 "Fine Austenitic Grain Size" of ASTM Designation: A 709M:

- A. Box girders, including internal floor beams
- B. Crossbeams
- C. Tower struts links
- D. Pipe beams"

In the Special Provisions, Section 10-1.51, "STEEL STRUCTURES," subsection "MATERIALS," the fifth, sixth, and seventh paragraphs are revised as follows:.

"Steel designated as Pipe Beam Grade 690 on the plans shall conform to the requirements in ASTM Designation: A 709M, Grade 690 with Supplementary Requirement S8, "Ultrasonic Examination," Supplementary Requirement S84 "Fracture-Critical, F, Material; Toughness Testing and Marking" tested for Zone 3; and Supplementary Requirement S93, "Limitations on Weld Repair (Fracture Critical Material Only)." The steel shall be made using a low nitrogen and low hydrogen practice such as vacuum degassing. The nitrogen content shall not exceed 0.009%. Charpy V-Notch tests for the as-fabricated pipe beam and heat affected zone (HAZ) shall meet 48 joules (J) minimum average, and 38 J minimum individual at -18° C. Weld metal shall meet the requirements of AWS D1.5, Table 12.1.

Steel designated as Pipe Beam Grade 485 and Shear Link Grade 485 on the plans shall conform to the requirements in ASTM Designation: A 709M, Grade HPS485W with Supplementary Requirement S8, "Ultrasonic Examination," Supplementary Requirement S84 "Fracture-Critical, F, Material; Toughness Testing and Marking" tested for Zone 3; and Supplementary Requirement S93, "Limitations on Weld Repair (Fracture Critical Material Only)." Charpy V-Notch tests for the as-fabricated pipe beam tubular and the pipe beam and shear link heat affected zone (HAZ) shall meet 48 joules (J) minimum average at -18° C.

Steel designated as Shear Link Grade 345 on the plans shall conform to the following:

- A. The steel shall conform to ASTM Designation: A 709M requirements for Fracture Critical Grade 345 with Supplementary Requirements S60 "Frequency of Tension Tests," such that tension tests shall be taken from each end of each as-rolled or as-heat treated plate, and S93, "Limitations on Weld Repair (Fracture Critical Material Only)," as modified herein.
- B. The sulfur content shall not exceed 0.01% by weight. The Carbon Equivalent (CE) shall not exceed 0.47%, where $CE = C + (Mn)/6 + (Cr + Mo + V)/5 + (Ni + Cu)/15$.
- C. The steel shall be fully killed and made to fine grain practice in conformance with the requirements in ASTM Designation: A 709M, Supplementary Requirement S28 "Fine Grain Practice" and S29 "Fine Austenitic Grain Size."
- D. The steel shall be made using a low nitrogen and hydrogen practice such as vacuum degassing. The nitrogen content shall not exceed 0.012%, except vanadium nitride strengthened alloys shall not exceed 0.018%.
- E. The plates may be heat treated as required to meet the properties specified herein. If tempered, the tempering temperature shall not be less than 593 C.

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- F. The Tensile Strength shall be within the range of 450 through 600 Mpa.
- G. The Yield Point or Yield Strength shall be within the range of 345 through 450 Mpa.
- H. The ratio of Yield Strength to Ultimate Strength shall not exceed 0.90.
- I. The tensile elongation shall be not less than 19% for a 200 mm gauge length specimen or 22% for a 50 mm gauge length specimen.
- J. The reduction of area in the tensile test shall be not less than 35%.
- K. Charpy V-Notch (CVN) tests for the base plate shall meet 41 J minimum average at – 40°C. CVN test for the as-fabricated heat affected zone and weld metal shall meet the requirements of AWS D1.5, Table 12.1.
- L. Tensile and toughness tests shall be performed on a per-plate basis.
- M. The stress vs. strain curve from all tensile tests shall be recorded and submitted to the Engineer for information with the test reports.
- N. Subsequent Check Test results shall not be cause for rejection of Shear Link Grade 345 unless testing at the mill is invalidated, for reasons such as equipment out of calibration, improper sampling, or other similar reasons."

In the Special Provisions, Section 10-1.51, "STEEL STRUCTURES," subsection "MATERIALS," the following paragraph is added after the eighth paragraph:

"Where Supplementary Requirement S8 is specified above, each plate shall be ultrasonically examined and shall meet the acceptance criteria in conformance with the requirements in ASTM Designation: A578, Level C."

In the Special Provisions, Section 10-1.51, "STEEL STRUCTURES," subsection "CASTINGS," the first paragraph is revised as follows:

"Castings shown on the plans as "Structural Casting Grade 345," "Structural Casting Grade 415," and "Structural Casting Grade 550" shall conform to the requirements of these special provisions. Castings for cable system components shall conform to the requirements in "Cable System" of these special provisions."

In the Special Provisions, Section 10-1.51, "STEEL STRUCTURES," subsection "CASTINGS," the following paragraph is added after the first paragraph:

"AISC certification will not be required for foundries and forge shops producing castings and forgings to the requirements of this section. Casting and forging vendors shall maintain a comprehensive quality control system conforming to an established guideline such as ISO 9000 series documents or equal."

In the Special Provisions, Section 10-1.51, "STEEL STRUCTURES," subsection "CASTINGS," the table following the eighth paragraph is revised as follows:

	STRUCTURAL CASTING GRADE 345	STRUCTURAL CASTING GRADE 415	STRUCTURAL CASTING GRADE 550
Tensile Strength:	550 MPa – 690 MPa	620 MPa – 795 MPa	680 MPa – 840 MPa
Yield Strength:	345 MPa, Minimum	415 MPa, Minimum	550 MPa, Minimum
Elongation:	22%, Minimum	20%, Minimum	18%, Minimum
Reduction of Area:	35%, Minimum	35%, Minimum	30%, Minimum
Charpy V-Notch:	42 J, Minimum at 0°C	42 J, Minimum at 0°C	65 J, Minimum at 0°C

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In the Special Provisions, Section 10-1.51, "STEEL STRUCTURES," subsection "SHOP WELDING," subsection "Design Details," under Item G "Dimensional Tolerances," Item 4.h is revised as follows:

"h. The tolerance for the height of the tower measured at the top of the tower saddle grillage is 75 mm and shall be taken after tower construction is completed and before cable erection."

In the Special Provisions, Section 10-1.52, "CABLE SYSTEM," subsection "MATERIALS AND FABRICATION," subsection "Anchor Rods," the first paragraph is revised as follows:

"Anchor rods shall conform to the requirements of ASTM Designation: A 354, Grade BC or BD and as specified in these special provisions. Nuts shall conform to the requirements of ASTM Designation: A 563. Washers shall conform to the requirements of ASTM Designation: F 436."

In the Proposal and Contract, "PROPOSAL TO THE DEPARTMENT OF TRANSPORTATION," the fourth paragraph is revised as follows:

"Bids are to be submitted for the entire work. Bids shall be submitted in conformance with the provisions in Section 2-1.05, "Alternative Bids," of the special provisions and the apparent successful bidder (low bidder) will be determined in conformance with the provisions in Section 3, "Award and Execution of Contract," of the special provisions. The amount of the bid for comparison purposes for each Alternative will be the total of all items."

In the Proposal and Contract, "PROPOSAL TO THE DEPARTMENT OF TRANSPORTATION," the seventh paragraph is deleted.

In the Proposal and Contract, the Engineer's Estimate Alternative 1 and Alternative 2, Item 6 is revised, Items 166, 167 and 168 are added and Item 165 is deleted as attached.

To Proposal and Contract book holders:

Replace pages 28, 35A, 36, and 43A of the Engineer's Estimate in the Proposal with the attached revised pages 28, 35A, 36, and 43A of the Engineer's Estimate. The revised Engineer's Estimate is to be used in the bid.

Indicate receipt of this addendum by filling in the number of this addendum in the space provided on the signature page of the proposal.

Submit bids in the Proposal and Contract book you now possess. Holders who have already mailed their book will be contacted to arrange for the return of their book.

Inform subcontractors and suppliers as necessary.

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This office is sending this addendum by confirmed facsimile to all book holders to ensure that each receives it. A copy of this addendum and the modified wage rates are available for the contractor's use on the Internet Site:

http://www.dot.ca.gov/hq/esc/oe/weekly_ads/addendum_page.html

If you are not a Proposal and Contract book holder, but request a book to bid on this project, you must comply with the requirements of this letter before submitting your bid.

Sincerely,

ORIGINAL SIGNED BY JEFF L DeFEVERE FOR:

REBECCA D. HARNAGEL, Chief
Office of Plans, Specifications & Estimates
Office Engineer

Attachments

3-1.01B AWARD AND EXECUTION OF CONTRACT

The award of the contract, if it be awarded, will be made within 30 days after the opening of the proposals if the apparent lowest bidder has met the goal for DBE participation. The award of the contract, if it be awarded, will be made within 60 days after the opening of the proposals if the apparent lowest bidder has not met the goal for DBE participation but has claimed good faith efforts to do so. These periods will be subject to extension for such further periods as may be agreed upon in writing between the Department and the bidders concerned. The award, if made, will be to the lowest responsible bidder whose proposal complies with all the requirements prescribed and who has met the goal for DBE participation or has demonstrated, to the satisfaction of the Department, adequate good faith efforts to do so. Meeting the goal for DBE participation or demonstrating, to the satisfaction of the Department, adequate good faith efforts to do so is a condition for being eligible for award of contract.

Bids will be compared on the basis of the total of all items for each Alternative Bid submitted. If the lowest responsive bid for Alternative 2 is more than 25 percent greater than the lowest responsive bid for Alternative 1, the provisions of "Buy America Requirements" of these special provisions will not apply, in conformance with 23 CFR 635.410(b)(3), and the apparent successful bidder (low bidder) will be determined from the bids for Alternative 1. If a proposal does not include a complete bid for Alternative 1, the bid for Alternative 2 submitted by that bidder will be used in the determination of bidder order for Alternative 1. If the lowest responsive bid for Alternative 2 is not more than 25 percent greater than the lowest responsive bid for Alternative 1, the provisions of "Buy America Requirements" of these special provisions will apply, and the apparent successful bidder (low bidder) will be determined from the bids for Alternative 2.

If the apparent low bid is found to be non-responsive, the applicability of "Buy America Requirements" of these special provisions and determination of the low bidder will again be determined in the same manner specified above.

The contract shall be executed by the successful bidder and shall be returned, together with the contract bonds, to the Department so that it is received within 10 days, not including Saturdays, Sundays and legal holidays, after the bidder has received the contract for execution. Failure to do so shall be just cause for forfeiture of the proposal guaranty. The executed contract documents shall be delivered to the following address: Department of Transportation MS 43, Attn: Office Engineer, 1727 30th Street, Sacramento, CA 95816.

A "Payee Data Record" form will be included in the contract documents to be executed by the successful bidder. The purpose of the form is to facilitate the collection of taxpayer identification data. The form shall be completed and returned to the Department by the successful bidder with the executed contract and contract bonds. For the purposes of the form, payee shall be deemed to mean the successful bidder. The form is not to be completed for subcontractors or suppliers. Failure to complete and return the "Payee Data Record" form to the Department as provided herein will result in the retention of 31 percent of payments due the contractor and penalties of up to \$20,000. This retention of payments for failure to complete the "Payee Data Record" form is in addition to any other retention of payments due the Contractor.

SECTION 4. BEGINNING OF WORK, TIME OF COMPLETION AND LIQUIDATED DAMAGES

Attention is directed to the provisions in "Order of Work," of these special provisions, Section 8-1.03, "Beginning of Work," in Section 8-1.06, "Time of Completion," and in Section 8-1.07, "Liquidated Damages," of the Standard Specifications and these special provisions.

The Contractor shall furnish the Engineer with a statement from the vendor that the order for the electrical materials required for this contract has been received and accepted by the vendor; and the statement shall be furnished within 15 days after the contract has been approved by the Attorney General, or the attorney appointed and authorized to represent the Department of Transportation. The statement shall give the date that the electrical materials will be shipped. If the Contractor has the necessary materials on hand, the Contractor will not be required to furnish the vendor's statement.

The Contractor shall begin work within 15 days after the contract has been approved by the Attorney General or the attorney appointed and authorized to represent the Department of Transportation.

A working day as defined in said Section 8-1.06 is re-defined for this project. Paragraph 2 through paragraph 5, inclusive, of said Section 8-1.06 shall not apply. Saturdays, Sundays and legal holidays, including days of inclement weather, will be counted as working days.

The work shall be completed in phases as described in Section 10-1.01 "Order of Work" of these special provisions.

Phase 1 shall comprise of the Pier W2 capbeam, as defined in Section 10-1.01 "Order of Work," and shall be diligently prosecuted to completion by **May 1, 2006**.

The Contractor shall pay to the State of California the sum of \$100,000 per day, for each and every day's delay in finishing Phase 1 beyond May 1, 2006, not to exceed \$18,000,000.

Phase 2 work shall be diligently prosecuted to completion before the expiration of the **1950 WORKING DAYS** beginning on the fifteenth day after approval of the contract.

The Contractor shall pay to the State of California the sum of \$100,000 per day, for each and every day's delay in finishing Phase 2 work in excess of the number of working days prescribed above for Phase 2.

Phase 3 work shall be diligently prosecuted to completion before the expiration of the **2130 WORKING DAYS** beginning on the fifteenth day after approval of the contract.

The Contractor shall pay to the State of California the sum of \$100,000 per day, for each and every day's delay in finishing Phase 3 work in excess of the number of working days prescribed above for Phase 3.

Phase 4 work shall be diligently prosecuted to completion before the expiration of the **2310 WORKING DAYS** beginning on the fifteenth day after approval of the contract.

The Contractor shall pay to the State of California the sum of \$100,000 per day, for each and every day's delay in finishing Phase 4 work in excess of the number of working days prescribed above for Phase 4.

Should two or more liquidated damages accrue concurrently, no more than \$100,000 per day will be assessed.

Inspection, testing, and review duties performed by the Engineer shall be considered as included in the number of working days for completion of the Designated Portions of Work and no extensions of time will be allowed for such actions in determining liquidated damages.

The time limit specified for the completion of the work contemplated herein is considered insufficient to permit completion of the work by the Contractor working a normal number of hours per day or week on a single shift basis. Should the Contractor fail to maintain the progress of the work in accordance with the "Progress Schedule (Critical Path Method)" required in these special provisions, additional shifts will be required to the extent necessary to ensure that the progress conforms to the above mentioned schedule and that the work will be completed within the time limit specified.

Full compensation for additional costs occasioned by compliance with the provisions in this section shall be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefor.

10-1.12 TIME-RELATED OVERHEAD

The Contractor will be compensated for time-related overhead in conformance with these special provisions.

Attention is directed to "Beginning of Work, Time of Completion and Liquidated Damages," "Force Account Payment," and "Progress Schedule (Critical Path Method)" of these special provisions.

The provisions in Section 9-1.08, "Adjustment of Overhead Costs," of the Standard Specifications shall not apply.

Time-related overhead shall consist of those overhead costs, including field and home office overhead, that are in proportion to the time required to complete the work. Time-related overhead shall not include costs that are not related to time, including but not limited to, mobilization, licenses, permits, and other charges incurred only once during the contract.

Field office overhead expenses include time-related costs associated with the normal and recurring operations of the construction project, and shall not include costs directly attributable to the work of the contract. Time-related costs of field office overhead include, but are not limited to, salaries, benefits, and equipment costs of project managers, general superintendents, field office managers and other field office staff assigned to the project, and rent, utilities, maintenance, security, supplies, and equipment costs of the project field office.

Home office overhead or general and administrative expenses refer to the fixed costs of operating the Contractor's business. These costs include, but are not limited to, general administration, insurance, personnel and subcontract administration, purchasing, accounting, and project engineering and estimating. Home office overhead costs shall exclude expenses specifically related to other contracts or other businesses of the Contractor, equipment coordination, material deliveries, and consultant and legal fees.

The quantity of time-related overhead associated with a reduction in contract time for cost reduction incentive proposals accepted and executed in conformance with the provisions in Section 5-1.14, "Cost Reduction Incentive," of the Standard Specifications shall be considered a construction cost attributable to the resultant estimated net savings due to the cost reduction incentive.

If the final increased quantity of time-related overhead exceeds 149 percent of the number of working days specified in the Engineer's Estimate, the Contractor shall, within 60 days of the Engineer's written request, submit to the Engineer an audit examination and report performed by an independent Certified Public Accountant of the Contractor's actual overhead costs. The independent Certified Public Accountant's audit examination shall be performed in conformance with the requirements of the American Institute of Certified Public Accountants Attestation Standards. The audit examination and report shall depict the Contractor's project and company-wide financial records and shall specify the actual overall average daily rates for both field and home office overhead for the entire duration of the project, and whether the costs have been properly allocated. The rates of field and home office overhead shall exclude unallowable costs as determined in the Federal Acquisition Regulations, 48 CFR, Chapter 1, Part 31. The audit examination and report shall determine if the rates of field office overhead and home office overhead are:

- A. Allowable in conformance with the requirements of the Federal Acquisition Regulations, 48 CFR, Chapter 1, Part 31.
- B. Adequately supported by reliable documentation.
- C. Related solely to the project under examination.

Within 20 days of the Engineer's written request, the Contractor shall make its financial records available for audit by the State for the purpose of verifying the actual rate of time-related overhead specified in the audit submitted by the Contractor. The actual rate of time-related overhead specified in the audit, submitted by the Contractor, will be subject to approval by the Engineer.

If the Engineer requests the independent Certified Public Accountant audit, or if it is requested in writing by the Contractor, the contract item payment rate for time-related overhead, in excess of 149 percent of the number of working days specified in the Engineer's Estimate, will be adjusted to reflect the actual rate.

The cost of performing an independent Certified Public Accountant audit examination and submitting the report, requested by the Engineer, will be borne equally by the State and the Contractor. The division of the cost will be made by determining the cost of providing an audit examination and report in conformance with the provisions of Section 9-1.03B, "Work Performed by Special Forces or Other Special Services," of the Standard Specifications, and paying to the Contractor one-half of that cost. The cost of performing an audit examination and submitting the independent Certified Public Accountant audit report for overhead claims other than for the purpose of verifying the actual rate of time-related overhead shall be entirely borne by the Contractor.

The quantity of time-related overhead to be paid will be measured by the working day, designated in the Engineer's Estimate as WDAY. The estimated number of working days is the number of working days, as specified in "Beginning of Work, Time of Completion and Liquidated Damages" of these special provisions. The quantity of time-related overhead will be increased or decreased only as a result of suspensions or adjustments of contract time which revise the current contract completion date, and which satisfy any of the following criteria:

- A. Suspensions of work ordered in conformance with the provisions in Section 8-1.05, "Temporary Suspension of Work," of the Standard Specifications, except:
 - 1. Suspensions ordered due to weather conditions being unfavorable for the suitable prosecution of the controlling operation or operations.
 - 2. Suspensions ordered due to the failure on the part of the Contractor to carry out orders given, or to perform the provisions of the contract.
 - 3. Other suspensions mutually agreed upon between the Engineer and the Contractor.
- B. Extensions of contract time granted by the State in conformance with the provisions in the fifth paragraph in Section 8-1.07, "Liquidated Damages," of the Standard Specifications and set forth in approved contract change orders, in conformance with the provisions in Section 4-1.03, "Changes," of the Standard Specifications.
- C. Reductions in contract time set forth in approved contract change orders, in conformance with the provisions in Section 4-1.03, "Changes," of the Standard Specifications.

In the event an early completion progress schedule, as defined in "Progress Schedule (Critical Path Method)" of these special provisions, is submitted by the Contractor and approved by the Engineer, the amount of time-related overhead eligible for payment will be based on the total number of working days for the project, in conformance with the provisions in "Beginning of Work, Time of Completion and Liquidated Damages" of these special provisions, rather than the Contractor's early completion progress schedule.

The contract price paid per working day for time-related overhead shall include full compensation for time-related overhead, including the Contractor's share of costs of the independent Certified Public Accountant audit of overhead costs requested by the Engineer, as specified in these special provisions, and as directed by the Engineer.

The provisions in Sections 4-1.03B, "Increased or Decreased Quantities," and 4-1.03C, "Changes in Character of the Work," of the Standard Specifications shall not apply to the contract item of time-related overhead.

Full compensation for additional overhead costs involved to satisfy internal milestone or multiple calendar requirements shall be considered as included in the contract items of work involved and no additional compensation will be allowed therefor.

Full compensation for additional overhead costs incurred during days of inclement weather when the contract work is extended into additional construction seasons due to delays caused by the State shall be considered as included in the time-related overhead paid during the contract working days, and no additional compensation will be allowed therefor.

Full compensation for additional overhead costs involved in performing additional contract item work that is not a controlling operation shall be considered as included in the contract items of work involved and no additional compensation will be allowed therefor.

Full compensation for overhead, other than time-related overhead measured and paid for as specified above, and other than overhead costs included in the markups specified in "Force Account Payment" of these special provisions, shall be considered as included in the various items of work and no additional compensation will be allowed therefor.

Overhead costs incurred by joint venture partners, subcontractors, suppliers or other parties associated with the Contractor shall be considered as included in the various overhead costs for which the Contractor is compensated, and no additional compensation will be allowed therefor.

For the purpose of making partial payments pursuant to the provisions in Section 9-1.06, "Partial Payments," of the Standard Specifications, the number of working days to be paid for time-related overhead in each monthly partial payment will be the number of working days, specified above to be measured for payment that occurred during that monthly estimate period, including compensable suspensions and right of way delays. Working days granted by contract change order due to extra work or changes in character of the work, will be paid for upon completion of the contract. The amount earned per working day for time-related overhead shall be the lesser of the following amounts:

- A) The contract item price.
- B) Fifteen percent of the original total contract amount divided by the number of working days specified in "Beginning of Work, Time of Completion and Liquidated Damages," of these special provisions.

After acceptance of the contract in conformance with the provisions in Section 7-1.17, "Acceptance of Contract," of the Standard Specifications, the amount of the total contract item price for time-related overhead not yet paid, will be included for payment in the first estimate made after acceptance of the contract in conformance with the provisions in Section 9-1.07, "Payment After Acceptance," of the Standard Specifications.

10-1.175 DOCUMENT MANAGEMENT SYSTEM

The Contractor shall provide the complete computer system (hardware and software), including one system for the State's exclusive possession and use, specifically capable of a Document Management System that is the latest version of "PMIV" by Integral Vision or equivalent to facilitate efficient document management and control.

The Contractor shall use the Document Management System for all documents created and received during the life of the project, which may include, but are not limited to, submittals, transmittals, shop drawings and calculations, Request for Information (RFI), letters, memorandums and plan sheets.

Attention is directed to "Payments" of Section 5 of these special provisions.

COMPUTER SYSTEM

The computer system to be furnished by the Contractor shall be complete with keyboard, mouse, monitor and network copier. The system shall be from those identified by the Gartner Group as Tier 1 and shall conform to the following requirements:

Hardware Requirements

- A. Latest industry-available Intel Pentium Xeon processor or equivalent, in dual processor configuration at 2.8 GHz or faster.
- B. Latest computer server operating system software compatible with the selected processor and associated hardware, Windows 2000 server with 80 client licenses or equivalent.
- C. Minimum of 2 gigabytes of Random Access Memory (RAM).
- D. Internal disk system with 800 Gigabytes storage with a RAID (Level 5) controller, one 1.44-megabyte 90 mm floppy disk drive and one DVD ROM/CD-RW or equivalent.
- E. Tape Backup unit (100/200 Gigabyte) and 20 backup tapes.
- F. Two Ethernet Network Interface Cards (NIC), 1000/100 Mbit or equivalent.
- G. Fax/modem, V-90 or equivalent.
- H. Network Attached Storage (NAS) device, minimum 800 Gigabytes
- I. Uninterruptible power supply (minimum battery backup time of 15 minutes).
- J. A 430 mm minimum, color monitor capable of at least 1,024 x 768 pixels.
- K. The network copier shall be a multifunction, Adobe Postscript Level 3 or compatible, copier/scanner/laser printer with a minimum of 128 megabytes RAM,. The laser printer shall print in color at 24 dots per millimeter (600 dots per inch) resolution. The scanner shall have a minimum resolution of 24 dots per millimeter x 24 dots per millimeter (600 dots per inch x 600 dots per inch), a minimum of 24 bit color depth, scan color or black and white documents at a minimum of 20 pages per minute and shall be capable of scanning images to the TIF (tagged image format) and PDF (Adobe Portable Document Format) file formats. The scanner shall have the ability for the user to name the scanned documents using the network copier keypad. The network copier shall be able to scan, copy and print in letter, legal and 280 mm x 432 mm paper sizes and shall have the capability of being connected to a network with 10/100 Mbit Ethernet.

Software Requirements

- A. General software shall be the latest versions of Microsoft Office Professional, McAfee VirusScan virus protection or equivalent and tape backup software. The general software shall be compatible with the hardware provided.
- B. One (1) Document Management System software, including 80 licenses and 5 annual maintenance renewal fees until 30 days after the final estimate has been received by the Contractor. The software for use to implement the Document Management System must be a commercially available software package.

PRE-CONSTRUCTION CONFERENCE

The Contractor shall schedule a pre-construction conference with the Engineer and the Contractor's project manager within 5 days of the approval of the contract. At this meeting the Engineer will review the requirements of this section of the special provisions with the Contractor.

The Contractor shall be prepared to discuss the proposed work plan and methodology for the Document Management System, that comply with the requirements of these special provisions.

DELIVERY AND SETUP

Attention is directed to "Pre-construction Conference" and "Training" of this special provision.

Before delivery and setup of the computer system, the Contractor shall submit, for approval by the Engineer, a detailed list of the computer hardware and software the Contractor proposes to furnish. The Engineer will have 3 days to review and approve the Contractor's proposal.

Upon approval by the Engineer, the Contractor shall furnish, install, set up, and maintain the computer system ready-for-use, and provide network copier supplies as necessary during the course of the project at a location determined by the Engineer. The Document Management System technical support and repair shall be performed by a 3rd party vendor selected by the Contractor. The hardware and software shall be installed and ready for use on to the first working day of the contract. Software maintenance, including licensing and other fees shall be maintained for the duration of the project until 30 days after receiving of the final estimate by the Contractor. The Contractor shall instruct and assist the Engineer in the use of the hardware and software. Hardware repairs shall be made within 48 hours of notification by the Engineer, or replacement equipment shall be furnished and installed by the Contractor until repairs have been completed.

Computer hardware and software furnished shall remain the property of the Contractor and shall not be removed until 30 days after the Contractor has received the final estimate, or as authorized by the Engineer.

The Contractor shall furnish software and all original software instruction manuals to the Engineer. The State will compensate the Contractor in conformance with the provisions in Section 4-1.03, "Extra Work," of the Standard Specifications for replacement of software which is damaged, lost or stolen after delivery to the Engineer.

TRAINING

Attention is directed to "Pre-construction Conference" and "Delivery and Setup" of these special provisions.

After approval of the Document Management System by the Engineer and prior to the first working day of the contract, the Contractor shall provide an initial 8-hour training session to the Department in the use of the software.

The Contractor shall provide a total of 20 training sessions, at 4 hours per session during the duration of the contract. The Contractor can expect subsequent training sessions to be distributed throughout the duration of the project until the total number of sessions have been completed.

Each training session shall accommodate up to 15 Department Employees. Training sessions shall be at a location, date and time acceptable to the Engineer.

The Session Trainer shall be approved by the Engineer.

DATA DELIVERY REQUIREMENTS

All data shall be delivered to the Engineer electronically on CD-ROM (ISO 9660 format with Joliet extensions) and shall be compatible with the Document Management System hardware and software and with general hardware running Microsoft Windows operating system. The electronic files shall conform to the following requirements:

- A. The CD-ROM shall contain the electronic document(s) contents of only one submittal or transmittal.
- B. A searchable Adobe Portable Document Format (PDF), version 4 or higher format, shall be used for all electronic documents.
- C. The electronic documents shall be scanned to their original size.
- D. The minimum resolution for the electronic PDF shall be 6 dots per millimeter (150 dots per inch) and the minimum color depth shall be 256 colors.
- E. Each plan sheet shall consist of one electronic PDF file.
- F. Each PDF electronic file shall not exceed 50 pages.

The Document Management System shall also provide a method of exporting all data to the relational database, Microsoft Access, keeping all the existing relationships intact. This export function should be accessible by the user and should be able to be performed at any time by the user.

The Contractor shall not be relieved of the requirements of "Working Drawings" of Section 5 of these special provisions.

DOCUMENT MANAGEMENT SYSTEM COST BREAK-DOWN
Contract No. 04-0120F4

ITEM	ITEM DESCRIPTION	UNIT	ESTIMATED QUANTITY	VALUE	AMOUNT
PC-1	Computer Hardware - Server	EA	2		
NC-1	Network Copier Hardware	EA	2		
NC-2	Network Copier Support	MO	144		
SW-1	Computer Software - Server Operating System Software	EA	2		
SW-2	Computer Software for Document Management System for server	EA	2		
SW-3	Computer Software for DMS for clients – concurrent users	EA	80		
SW-4	Computer Software for DMS for clients – Annual Maintenance	EA	880		
SW-5	Software Technical Support for Server/Client for DMS	Hrs	2040		
SW-6	Software Technical Support for Server/Client for DMS - Sacramento	Hrs	120		
SW-7	Add-on Software – PDF Split	EA	12		
SW-8	Add-on Software – PDF doc	EA	105		
TR-1	Computer Software Training Sessions – ½ Day	EA	20		
DI-1	Data Input Support for the Department	Hrs	600		

TOTAL _____

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ADDED PER ADDENDUM NO. 22 DATED APRIL 23, 2004

The approved cost break-down will be used to determine partial payments during the progress of the work and as the basis for calculating the adjustment in compensation for the item of Document Management System due to increases or decreases of quantities ordered by the Engineer. When an ordered change increases or decreases the quantities of an approved cost break-down item, the adjustment in compensation will be determined in the same manner specified for increases and decreases in the quantity of a contract item of work in conformance with the provisions in Section 4-1.03B, "Increased or Decreased Quantities," of the Standard Specifications. If an ordered change requires a new item which is not on the approved cost break-down, the adjustment in compensation will be determined in the same manner specified for extra work in conformance with Section 4-1.03D, "Extra Work," of the Standard Specifications.

If requested by the Contractor and approved by the Engineer, changes to the Document Management System listed in the approved cost break-down, including addition of new computer hardware and software, will be allowed. The net cost increase to the Document Management System item will be paid for as extra work as provided in Section 4-1.03D, "Extra Work," of the Standard Specifications.

PAYMENT

The contract lump sum price paid for Document Management System shall include full compensation for furnishing all labor, material, tools, equipment, and incidentals, and for doing all the work involved in providing and maintaining the Document Management System, as specified in the Standard Specifications and these special provisions.

The Department will retain an amount equal to \$500,000 for each estimate period in which the Contractor fails to provide the Document Management System or maintain the Document Management System conforming to the requirements of these special provisions, as determined by the Engineer. Retentions held in conformance with this section shall be in addition to all other retentions provided for in the contract. The retention for failure to provide or maintain an acceptable Document Management System will be released for payment on the next monthly estimate for partial payment following the date that an acceptable Document Management System has been provided or maintained. Upon completion of all contract work, any remaining withheld funds associated with the Document Management System will be released for payment. No interest will be due the Contractor on withheld amounts.

If the Contractor fails to complete any of the work in providing and maintaining the Document Management System required by this section, the Engineer shall make an adjustment in compensation in conformance with the provisions in Section 4-1.03C, "Changes in Character of Work," of the Standard Specifications for the work not performed. Adjustments in compensation for Document Management System will not be made for any increased or decreased work ordered by the Engineer in furnishing Document Management System.

10-1.44 SHEAR KEY (PIER E2)

This work shall consist of fabricating, testing, and installing the shear key on Pier E2 in conformance with details shown on the plans and the requirements of these special provisions.

The shear key consists of shear key housing, shear key stub with spherical ball, spherical housing, cover plates, dust cover, anchor bolts, and threaded bolts. The lubricant shall be self-lubricated and shall be provided for all bronze surfaces and other surfaces as shown on the plans. Shear keys shall be anchored in place with high strength non-shrink grout.

The shear key assembly consists of shear key housing, shear key stub with spherical ball, and spherical housing with lubricant.

Shear keys shall be furnished and installed at Pier E2.

GENERAL

The Contractor's attention is directed to Section "Steel Structures," of these special provisions for steel casting requirements.

The Contractor's attention is directed to Section "Spherical Bushing Bearing (Pier E2)," of these special provisions for additional installation requirements.

The design loads, design rotations, design displacements, and alignment tolerances shall conform to the values shown on the plans.

WORKING DRAWINGS

The Contractor shall submit working drawings in conformance with the provisions in Section, "Working Drawings," of these special provisions.

Working drawings shall include complete details, information, drawings, and substantiating calculations of the shear key and its components and the method, materials, equipment, and procedures of fabrication and installation that the Contractor proposes to use including the placement of high strength non-shrink grout.

Working drawing submittals shall include the following:

- A. Shear key fabrication plans including complete details for each component.
- B. All ASTM, AASHTO, or other material designations including dust cover and its connection to other shear key components.
- C. Storage and shipping plans including details of handling and supporting of the shear keys. Each shear key shipment shall be accompanied by a Certificate of Compliance in conformance with the provisions in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications. The certificate shall state that the materials and fabrication involved comply in all respects to the specifications and data submitted in obtaining approval.
- D. Installation plans including the following:
 - 1. Method, materials, equipment, sequence, detailed procedures, and temporary support details that the Contractor proposes to use for installation of the shear key. The Contractor's proposed shear key installation procedures and sequences shall be detailed in the superstructure construction sequences as specified elsewhere in these special provisions.
 - 2. The Contractor's calculated relative distances for a) relative distance between the centerline of Pier E2 floor beam at box girder (normal to vertical profile) and the centerline of Pier E2 (vertical); distance is measured in the longitudinal direction along the top horizontal surface of concrete crossbeam, and b) relative distance between centerline of box girder (normal to cross slope) and centerline of Pier E2 (vertical); distance is measured in the transverse direction along the top sloped surface of the concrete crossbeam.
- E. Details of lifting locations and mechanisms.

A supplement to the working drawings shall include the following:

- A. The quality control plan (QCP). The QCP of the shear keys shall conform to the requirements in "Quality Control" of these special provisions and shall include descriptions, details, and procedures for the fabrication and installation of the shear keys, except that the portion of the QCP for welding shall be submitted separately in conformance with "Welding" of special provisions.
- B. The Contractor shall submit to the Engineer a manual for the shear key inspection, maintenance, and replacement. This manual shall include:
 1. A record of shear key for each component including the tracing of all components during the fabrication and installation of shear key.
 2. Recommended life expectancy for each shear key component.
 3. Recommended frequency for shear key inspection and maintenance schedule.
 4. Procedures and details to perform the shear key inspection and maintenance.
 5. List of indication of shear key defects and the associated repair methods, if applicable.
 6. Procedures and sequences for shear key replacement including locations of temporary support and estimate of jacking load for each temporary support location, sequences and methods of detensioning anchor bolts, method of debonding between concrete and shear key stub and anchor bolts, method of removing and replacing shear keys, a list of equipment to be used for shear key replacement, and traffic, safety, and environmental impact.

Each working drawing and calculation sheet shall be signed by an engineer who is registered as a Civil Engineer or Mechanical Engineer in the State of California.

Complete working drawings and supplement shall be submitted to the Engineer within 80 working days after the contract is awarded. After complete working drawings and supplement are received by the Engineer, the Contractor shall allow the Engineer 40 working days to review the submittal.

Upon completion of installation, the Contractor shall submit to the Engineer certification stating that each shear key has been installed in accordance with the approved working drawings and supplements installation procedure.

MATERIALS

The materials specifications of shear key components shall conform to the following table:

Component	ASTM Specifications
Shear Key Housing	Structural Casting, Grade 550
Shear Key Stub with Spherical Ball	Structural Casting, Grade 345
Spherical Housing	High Strength Manganese Bronze Centrifugally Cast, B271-C86300
Anchor Bolts	A354, Grade BD
Threaded Bolts	A240, Type 316

Attention is directed to "Welding" and "Steel Audits" of these special provisions.

Attention is directed to "Lubricant and Test" of these special provisions.

Prestressing operation of anchor bolts shall conform to the requirements in Section, "Prestressing Concrete," of these special provisions.

High strength nonshrink grout shall conform to the requirements in Section, "High Strength Nonshrink Grout," of these special provisions.

Steel components including plates and anchor bolts shall conform to the details shown on the plans, the provisions in "Steel Structures," of the Standard Specifications, and these special provisions.

Clean and paint shear key shall conform to the requirements in Section, "Clean and Paint Structural Steel (Seismic Joint, Spherical Bushing Bearing, and Shear Key)," of these special provisions.

The bronze alloy for the spherical housing shall be high strength manganese bronze centrifugally cast conforming to the requirements of ASTM Designation: B271-C86300. The mating surfaces of the spherical ball shall be stainless steel weld overlay conforming to the requirements of ASTM Designation: A240 Type 316. All items integral to and for the assembly of the shear key shall be stainless steel conforming to ASTM Designation: A 240, Type 304 or Type 316.

QUALITY CONTROL

Quality Control (QC) shall be the responsibility of the Contractor. Quality Control shall be performed by an entity having a line of responsibility distinctly different from that of the manufacturer's fabrication department. As a minimum, the Contractor shall perform inspection and testing prior to fabrication, during fabrication, and after fabrication as specified herein and additionally as necessary to ensure that materials and workmanship conform to the requirements of the contract documents. Quality Control shall apply to each component of the shear key in addition to the assembly, shipping and installation of the shear key.

The QC Inspector shall be the duly designated person who acts for and on behalf of the Contractor for inspection, testing, and quality related matters for all fabrication.

Quality Assurance (QA) is the prerogative of the Engineer. The QA Inspector is the duly designated person who acts for and on behalf of the Engineer.

Each QC Inspector shall be responsible for quality control acceptance or rejection of materials and workmanship.

The Contractor shall provide sufficient number of QC Inspectors to ensure continuous inspection.

The Contractor shall designate in writing a Quality Control Manager (QCM). The QCM shall be responsible directly to the Contractor for the quality of the fabrication, including materials and workmanship, performed by the Contractor and subcontractors.

The QCM shall be the sole individual responsible to the Contractor for submitting and receiving all correspondences, required submittals, and reports to and from the Engineer.

The Contractor shall submit to the Engineer 3 copies of Quality Control Plan (QCP), in conformance with the requirements in "Working Drawings," of these special provisions. As a minimum, each QCP shall include the following:

- A. A manual including equipment, testing procedures, and code of safe practices.
- B. The names, qualifications, and documentation of certifications for the QCM and all QC Inspectors.
- C. An organizational chart showing all QC personnel and their assigned QC responsibilities.
- D. The methods and frequencies for performing all required quality control procedures, including QC inspection forms to be used, as required by the specifications including:
 - 1. All visual inspections.
 - 2. Tests.
 - 3. Calibration procedures and calibration frequency for all equipment.
- E. Forms to be used for Certificates of Compliance, monthly production logs, and monthly reports.
- F. Mill certificates and material certificates.
- G. Shipping plan.
- H. Installation plan.

Prior to submitting the QCP, a pre-fabrication meeting between the Engineer, Contractor, and fabricator, any entity performing shear key component fabrication or subcontractor to the Fabricator, shall be held to discuss the requirements for the QCP. The pre-fabrication meeting shall be held in San Francisco Bay Area.

After a complete QCP is submitted, the Contractor shall allow the Engineer 10 working days to review the submittal. An amended QCP shall be submitted to, and approved in writing by the Engineer, for proposed revisions to the approved QCP. The Contractor shall allow the Engineer 10 working days to complete the review of the amended QCP.

After final approval of the QCP, or amended QCP, the Contractor shall submit 7 copies to the Engineer of each of these approved documents.

It is expressly understood that the Engineer's approval of the Contractor's QCP shall not relieve the Contractor of any responsibility under the contract for the successful completion of the work in conformance with the requirements of the plans and specifications. The Engineer's approval shall not constitute a waiver of any requirement of the plans and specifications nor relieve the Contractor of any obligation thereunder, and defective work, materials, and equipment may be rejected notwithstanding approval of the QCP.

A monthly production log for fabrication shall be kept by the QCM for each day that fabrication is performed. The monthly report from each QC Inspector shall be included in the log.

The QCM shall sign and furnish to the Engineer, a Certificate of Compliance in conformance with the provisions in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications for each shear key. The certificate shall state that all of the materials and workmanship incorporated in the work, and all required tests and inspections of this work have been performed in conformance with the details shown on the plans and approved working drawings and the provisions of the Standard Specifications and these special provisions.

FABRICATION AND INSTALLATION

The Contractor's attention is directed to Section, "Steel Structures," of these special provisions for fabrication and installation of shear keys at Pier E2. The Contractor shall also conform to the requirements specified herein.

Conformance with the requirements in SSPC-QP 1, SSPC-QP 2, and SSPC-QP 3 of the "SSPC: The Society for Protective Coatings" will not be required for shear keys.

Finish coats will not be required on the shear keys.

Each shear key shall be marked for location and orientation in conformance with the approved working drawing and supplement. Shear keys shall be secured to shipping skids in a manner that assures protection during transportation and off-loading. Each skid shall be wrapped in moisture proof and dust proof covers at all times until immediately before installation.

After completion of shear key fabrication, the Contractor shall assemble all shear key components, except high strength nonshrink grout, at the Contractor's shear key manufacturer's facility to demonstrate to the Engineer that all shear key components and parts will be installed properly as shown on the plans. Shear key assembly shall be witnessed by the Engineer. The Contractor shall notify the Engineer 20 working days before shear key assembly begins. After the shear key assembly is successfully completed, the Contractor shall disassemble the shear key into the parts that are designed for transportation. The Contractor shall take measures to ensure that the shear key shall not be damaged during the assembly and disassembly processes.

Damaged shear keys shall be replaced.

Qualified representatives from manufacturer of the shear key assembly shall be present during installation of all spherical bushing bearings.

Prior to shear key installation, the Contractor shall measure the relative longitudinal distance between the centerline of E2 floor beam at box girder and the centerline of Pier E2 and relative transverse distance between the centerline of box girder and the centerline of Pier E2. The distances shall be measured and compared with the calculated values specified in the approved working drawings and supplement. If the longitudinal difference between the centerline of E2 floor beam at box girder and the centerline of Pier E2 is greater than 20 mm or the transverse difference between the centerline of box girder and the centerline of Pier E2 is greater than 5 mm, the Contractor shall suspend shear key installation process, and submit to the Engineer a mitigation plan for approval. The mitigation plan shall include the necessary measures to be taken to compensate for the difference. After the Contractor submits the mitigation plan, the Contractor shall allow the Engineer 10 working days for review. Shear key installation shall not be resumed until the Engineer has reviewed and approved, in writing, the Contractor's mitigation plan.

Shear key shall be temporarily supported during grout operations. Temporary supports shall prevent the rotation or displacement of the shear key during grout operation. Temporary supports shall not inhibit the functioning of the shear key after grout has set. Temporary supports shall not restrict the movement at bridge joints due to temperature changes and shortening from prestressing forces. Materials for temporary supports within the limits for placing grout shall conform to the requirements for form fasteners.

Prior to grouting, survey shall be taken to ensure centers of rotation of all bearings and shear keys are aligned in the same transverse axis.

High strength nonshrink grout placement shall conform to the requirements in Section, "High Strength Nonshrink Grout," elsewhere of these special provisions.

SHEAR KEY STORAGE

Shear keys shall be transported to and stored at the shear key storage facility as designated by the Engineer. Said location will be within 25 km of the San Francisco-Oakland Bay Bridge Toll Plaza. The Contractor shall notify the Engineer at least two months prior to delivery of the shear keys.

MEASUREMENT AND PAYMENT

Furnish and install shear key (Pier E2) will be measured and paid for by the unit and the number of shear keys for payment will be determined by the actual count in the completed work.

The contract unit price paid for furnish and install shear key (Pier E2) shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in constructing the shear key, testing including fixtures, temporary supports, installing in final position, including shear key high strength nonshrink grout, and cleaning and painting of shear key, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Full compensation for the qualified representative of the manufacturer to be present during installation of all shear keys shall be considered as included in the contract unit price paid for furnish and install shear key (Pier E2) and no additional compensation will be allowed therefor.

If a portion or all of shear keys are either fabricated or tested at a site more than 480 air line kilometers from both Sacramento and Los Angeles, additional shop inspection expenses will be sustained by the State. Payment to the Contractor for furnishing shear keys will be reduced \$5,000 for any fabrication and testing site located more than 480 air line kilometers from both Sacramento and Los Angeles, or in the case where a fabrication or testing site is located more than 4800 air line kilometers from both Sacramento and Los Angeles, payment will be reduced \$20,000.

ENGINEER'S ESTIMATE**04-0120F4****ALTERNATIVE 1 FOREIGN STEEL AND IRON ALTERNATIVE**

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
1	030748	WORKING DRAWING CAMPUS	LS	LUMP SUM	LUMP SUM	
2	030702	ELECTRONIC MOBILE DAILY DIAIRY COMPUTER SYSTEM DATA DELIVERY	LS	LUMP SUM	LUMP SUM	
3	BLANK					
4	030704	EROSION CONTROL (TYPE B)	M2	1570		
5	070010	PROJECT SCHEDULE (CRITICAL PATH)	LS	LUMP SUM	LUMP SUM	
6	070018	TIME-RELATED OVERHEAD	WDAY	2310		
7	071322	TEMPORARY FENCE (TYPE CL-1.8)	M	205		
8	030705	3.66 M TEMPORARY GATE (TYPE CL-1.8)	EA	1		
9	049281	FURNISH AND REMOVE TEMPORARY TOWERS	LS	LUMP SUM	LUMP SUM	
10	BLANK					
11	BLANK					
12	BLANK					
13	BLANK					
14	BLANK					
15	BLANK					
16	BLANK					
17	BLANK					
18	BLANK					
19	BLANK					
20	BLANK					

**ALTERNATIVE 1
04-0120F4**

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
161	031526	SAS SUPERSTRUCTURE ROADYWAY WESTBOUND	LS	LUMP SUM	LUMP SUM	
162	BLANK					
163 (S)	049349	SEISMIC JOINT (HINGE AW)	LS	LUMP SUM	LUMP SUM	
164 (S)	049350	SEISMIC JOINT (HINGE AE)	LS	LUMP SUM	LUMP SUM	
165	BLANK					
166	032980	CLEAN AND PAINT STRUCTURAL STEEL (DACROMET)	LS	LUMP SUM	LUMP SUM	
167	032992	DOCUMENT MANAGEMENT SYSTEM	LS	LUMP SUM	LUMP SUM	
168	999990	MOBILIZATION	LS	LUMP SUM	LUMP SUM	

TOTAL BID ALTERNATIVE 1: _____

ENGINEER'S ESTIMATE**04-0120F4****ALTERNATIVE 2 DOMESTIC STEEL AND IRON ALTERNATIVE**

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
1	030748	WORKING DRAWING CAMPUS	LS	LUMP SUM	LUMP SUM	
2	030702	ELECTRONIC MOBILE DAILY DIAIRY COMPUTER SYSTEM DATA DELIVERY	LS	LUMP SUM	LUMP SUM	
3	BLANK					
4	030704	EROSION CONTROL (TYPE B)	M2	1570		
5	070010	PROJECT SCHEDULE (CRITICAL PATH)	LS	LUMP SUM	LUMP SUM	
6	070018	TIME-RELATED OVERHEAD	WDAY	2310		
7	071322	TEMPORARY FENCE (TYPE CL-1.8)	M	205		
8	030705	3.66 M TEMPORARY GATE (TYPE CL-1.8)	EA	1		
9	049281	FURNISH AND REMOVE TEMPORARY TOWERS	LS	LUMP SUM	LUMP SUM	
10	BLANK					
11	BLANK					
12	BLANK					
13	BLANK					
14	BLANK					
15	BLANK					
16	BLANK					
17	BLANK					
18	BLANK					
19	BLANK					
20	BLANK					

**ALTERNATIVE 2
04-0120F4**

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
161	031526	SAS SUPERSTRUCTURE ROADYWAY WESTBOUND	LS	LUMP SUM	LUMP SUM	
162	BLANK					
163 (S)	049349	SEISMIC JOINT (HINGE AW)	LS	LUMP SUM	LUMP SUM	
164 (S)	049350	SEISMIC JOINT (HINGE AE)	LS	LUMP SUM	LUMP SUM	
165	BLANK					
166	032980	CLEAN AND PAINT STRUCTURAL STEEL (DACROMET)	LS	LUMP SUM	LUMP SUM	
167	032992	DOCUMENT MANAGEMENT SYSTEM	LS	LUMP SUM	LUMP SUM	
168	999990	MOBILIZATION	LS	LUMP SUM	LUMP SUM	

TOTAL BID ALTERNATIVE 2:
